

Hydrocarbon Potential and Exploration Play Trends, Northwest Territories and Yukon – A Review

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ABSTRACT

The Northwest Territories and Yukon Territory were divided into 13 exploration regions based on physiographic and geological controls and the regions compared with respect to discovered resources and overall ultimate potential.

The discovered oil resources of 1015 MMbbl in the Mackenzie Delta/Beaufort Sea region are almost 4 times that discovered in the other 12 exploration regions combined (272 MMbbl). Most of the mainland oil resource is found in the Mackenzie Plain region (260 MMbbl reflecting the Norman Wells field). The discovered gas resources in the Mackenzie Delta/Beaufort Sea (9 Tcf) are more than 4 times the combined volume discovered in the other exploration regions (2 Tcf).

With respect to undiscovered resource potential, the Mackenzie Delta/Beaufort Sea numbers are far greater than the total assigned to the other 12 exploration regions. These numbers are estimated at 5.4 Bbbl oil and 53 Tcf gas, as compared to 0.4 Bbbl oil and 16 Tcf gas for the mainland exploration regions. Liard Plateau (4.1 Tcf), Peel Plain (4.4 Tcf), Southern Territories (1.9 Tcf), Colville Hills (1.4 Tcf) and Mackenzie Plain (1.5 Tcf) have significant estimated undiscovered gas potential as indicated by the bracketed numbers.

In summary, the Mackenzie Delta/Beaufort Sea is the most attractive of all the exploration regions with respect to hydrocarbon potential. The Liard Plateau region is highly prospective for large volumes of natural gas. The Southern Territories, Mackenzie Plain, Colville Hills and, in particular, Peel Plain, are exploration regions also considered to be favourable with respect to exploring for, and discovering, viable economic reserves of natural gas.